



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,378	03/26/2004	Peter M. Michalakos	H0003879-3138	3068

7590 08/14/2008
Honeywell International, Inc.
Law Dept. AB2
P.O. Box 2245
Morristown, NJ 07962-9806

EXAMINER

MERKLING, MATTHEW J

ART UNIT	PAPER NUMBER
----------	--------------

1795

MAIL DATE	DELIVERY MODE
-----------	---------------

08/14/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/811,378	Applicant(s) MICHALAKOS ET AL.	
	Examiner MATTHEW J. MERKLING	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-8 and 10-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-19 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 1, the newly amended claim now recites a catalytic composition consisting of:

“at least one silver-based component selected from the group consisting of Ag (silver) metal and AgO (silver oxide), and
at least one palladium-based component selected from the group consisting of PdO (palladium oxide), PdO₂ (palladium dioxide), and Pd (palladium) metal, wherein said catalytic composition is adapted for the catalytic removal of ozone from said air stream at temperatures within the range of from about 100 to 500° F; and wherein the ozone removal system is resistant to poisoning by sulfur and phosphorus compounds...”

In the original filed application, Applicant disclosed a catalytic composition that consists of silver metal and palladium oxide (see paragraph 68 of specification), but does not disclose a catalytic composition that consists of at least one of Ag and AgO and at least one of Pd, PdO and PdO₂. In numerous locations, Applicant discloses a catalytic composition which comprises a first catalytic component/silver-based component (which can be chosen from the group consisting of Ag and AgO) and a second catalytic component/palladium-based component (which can be chosen from the group consisting of Pd, PdO and PdO₂) (see originally filed claim

Art Unit: 1795

1 for this disclosure), but does not teach a catalytic component consisting of Ag or AgO and Pd, PdO or PdO₂. In other words, Applicant discloses a catalytic composition that consists only of Ag and PdO, but does not does not disclose a catalytic composition consisting only of Ag or AgO and Pd, PdO or PdO₂.

In claim 6, a similar situation is observed. Applicant claims a catalyst composition that consists of silver metal and a second component capable of efficient decomposition of ozone within a second temperature range. While the original disclose supports a catalyst composition consisting of silver metal and palladium oxide (see paragraph 68), there is no disclosure where the catalyst composition consists of silver metal and a second component capable of efficient decomposition of ozone within a second temperature range.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Wyatt (GB 2056424).

Regarding claims 1-4, Wyatt discloses an ozone removal system for an aircraft (page 1 lines 18-25), comprising:

a housing having an upstream end and a downstream end (inherently, by mention of a catalyst and a stream of air passing over (page 1 lines 18-33);

a substrate (metal support, page 1 line 33) disposed within said housing, said substrate and said housing adapted for the passage of an air stream therethrough (page 1 lines 18-33);

a titania catalyst support disposed on a surface of said substrate (refractory metal oxide, washcoat, such as titanium oxide coated on the metal support, page 1 lines 33-36);

a first duct affixed to said upstream end of said housing, said first duct coupled to an air intake unit for providing said air stream (inherently, by mention of a stream of air flowing from the compressor, to the housing and into the aircraft cabin (page 1 lines 18-33); and

a catalytic composition disposed on said titania catalyst support, said catalytic composition consisting of:

at least one silver-based component selected from the group consisting of Ag (silver) metal and AgO (silver oxide) and at least one palladium-based component selected from the group consisting of PdO (palladium oxide), PdO₂ (palladium dioxide), and Pd (palladium) metal, (the preferred catalytic material comprises Ag and Pd, page 1 line 28-32).

Regarding limitations recited in claims 1-3 which are directed to a manner of operating disclosed system, neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP §2114 and 2115. Further, process limitations do not have a patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states “Expressions relating the

apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim.

Furthermore, in claim 3 the claimed properties and performance of said catalyst composition in defined temperature ranges (deactivation properties, ozone reduction rates) are not disclosed by Wyatt, but are assumed to be the same as the claimed catalyst composition is identical to the catalyst composition taught by modified Terui (PdO and Ag on titania). Moreover, something which is old does not become patentable upon the discovery of a new property (see MPEP §2112).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terui et al. (US 5,187,137) in view of Sakakibara (JP 03-151046 A).

Regarding claims 6-8, Terui discloses an ozone removal system (see abstract) for an aircraft, comprising:

a catalyst that receives airflow (see abstract, and thus an upstream and downstream end);

a substrate within a housing (aircraft) with a titania catalyst support (col. 4 lines 16-19) disposed on a surface of said substrate (col. 4 lines 20-23);

a catalytic composition of palladium oxide (col. 3 lines 8-16) disposed on said titania catalyst support.

Furthermore, the claimed temperature of operation (100-500°F) is not considered to confer patentability to an apparatus claim as the manner of operating a device does not differentiate the apparatus from the prior art (See MPEP §2114).

Terui fails to teach a silver based component consisting of silver.

Sakakibara also discloses a catalyst for the decomposition of ozone (see title).

Sakakibara teaches the synergistic effects of using silver with palladium in the service of decomposing ozone (see abstract). Sakakibara teaches the characteristics of both palladium and silver are involved in the reduction of ozone and also that the catalyst is excellent in both the performance of an initial period and durability (see abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the silver of Sakakibara to the palladium oxide and titania catalyst of Terui in order to harness the synergistic effects of palladium and silver in the decomposition of ozone and the excellence in performance during an initial period as well as long term.

Regarding limitations recited in claims 6-8 which are directed to a manner of operating disclosed system, neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP §2114 and 2115. Further, process limitations do not have a patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states “Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim.

Allowable Subject Matter

8. Claims 10-19 allowed.
9. The following is a statement of reasons for the indication of allowable subject matter: Claims 10 and 17 both disclose an ozone removal system that includes a catalyst composition that consists of silver metal and palladium oxide (PdO) which is disposed on a layer of titania. The closest prior art (Wyatt, Terui and Sakakibara) discloses and suggests an ozone removal system which comprise silver and palladium on titania, but the prior art does not teach or suggest a catalytic composition consisting of silver metal and palladium oxide (PdO) on the surface of a titania support in an ozone removal system.

Response to Arguments

10. Applicant's arguments filed 6/12/08 have been considered but are moot in view of the new ground(s) of rejection necessitated by amendment.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW J. MERKLING whose telephone number is (571)272-9813. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. J. M./

Examiner, Art Unit 1795

/Alexa D. Neckel/

Supervisory Patent Examiner, Art Unit 1795